Ubiquitous CAE System on Mobile Devices

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Object

Control points

Isogeometric Analysis

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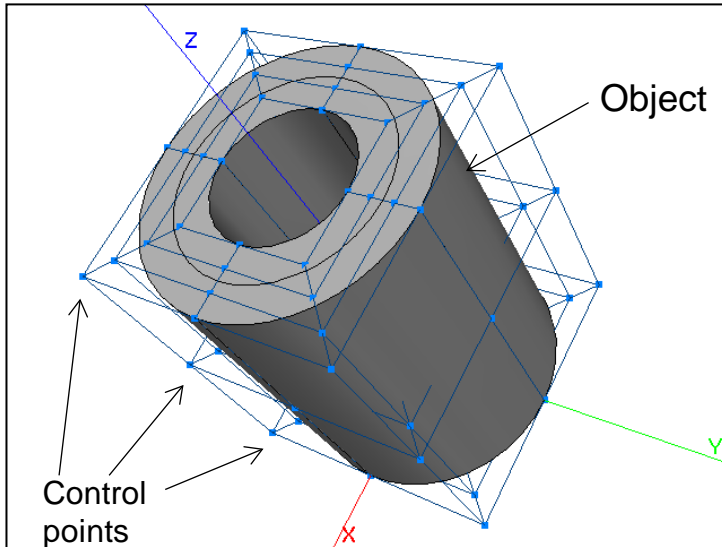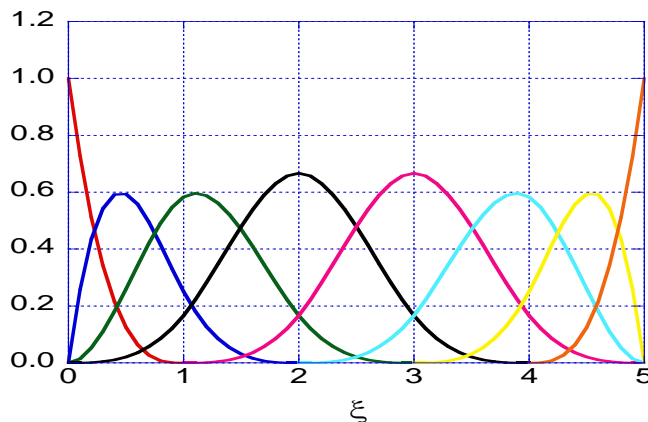
NURBS Basis Functions

Content:

3D printers have become available to ordinary consumers. They will make it possible for everyone to be a manufacturer. Personal manufacturing inevitably needs personal CAE systems that support manufacturing : "personal" means "easy to use" and " available anytime, anywhere".

We have focused on mobile devices as a base platform for personal CAE systems. They have been rapidly gaining both popularity and enough performance to be used for our CAE system.

Isogeometric analysis (IGA) is a kind of finite element method. As it uses NURBS functions as basis functions for analysis, mesh generation, most time-consuming process in FEM, is not necessary. We are developing an IGA-based ubiquitous CAE system for mobile devices. Our system includes all processes: pre-process, main(solver)-process and post process. We are also developing new efficient human interface for mobile devices using the camera and sensors in them.